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ABSTRACT

The characteristics of cooperative instructional designs are defined, and their effect in enhancing adult motivation and learning is discussed. Following a discussion of some aspects of adult needs in the instruction environment, the critical features of control theory, synergogy, and cooperative learning in general are examined. The advantages and limitations of specific cooperative instructional designs are identified. An instructional design is proposed that is intended to maximize the effectiveness of instruction for both the learner and the instructor. It is concluded that for maximum achievement, the cooperative learning design should include such elements as: task specialization for each individual on the team; group study and collaboration; assessment of individual member performance on a task; a group or team "score" based on individual members' performance; and use of specific group rewards based on individual learning. An example of such a cooperative learning design is provided. Contains 10 references. (KM)

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COOPERATIVE LEARNING METHODS AND THE ADULT LEARNER

by

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Introduction

The purposes of this paper are to define the characteristics of cooperative instruction designs and to demonstrate how these designs serve to enhance adult motivation and learning. The objectives of the paper are to:

* identify some of the aspects of adult needs in the instruction environment;
* examine the critical features of control theory, Synergogy, and cooperative learning, in general;
* identify the advantages and limitations of cooperative instruction designs; and,
* propose an instruction design aimed at maximizing instruction effectiveness for both the learner and the instructor.

The following information addresses each of the objectives.

Background

In this country, about 40 million adults participate each year in some form of education activity. This participation takes place in college courses, business-related seminars, and in other forms. Last year, the Chronicle of Higher Education (1987) reported that even with the decline in the number of traditional college-aged students, college enrollments, nation-wide, had held steady or had slightly increased. This represents real growth in the college attending population. Owing to increased needs for training and skill development and to career changes and shifts, we are likely to find more and more adult participation in education activities in the future. Many adults are returning to the education environment after a long absence. Instructors need to create a learning environment that responds to the needs of the adult learner.

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Some Needs of the Adult Learner

There has not been established an authoritative list of the needs of adult learners, however, there are some generalizations which may be identified. In the instruction setting, as well as in other settings, adults seek to gain competence over their environment. People seek mastery, control, and dominance over their interactions with their environments (White, 1959). Porter (1985) and Drucker (1988) find that this feature is true not only of the individual as a complex entity, but is also an aspect of organization functioning as well.

To generalize, most adult learners are relatively independent, require less telling (pedagogy) and want to view the instructor as a facilitator -- a helper; want some sense of power in the classroom (someone listens, someone thinks what I have to say is important, etc.); want to belong, want to share, want to cooperate; accept the legitimacy of authority figures but are usually not so accepting of the control exercised by authority figures owing to their maturity and experience. We have known for years of the importance of the learned drives for power, achievement, mastery, and affiliation but we probably do not take full cognizance of this knowledge when designing instruction.

Wlodkowski (1981) has proposed the Time Continuum model of motivation which has particular relevance for the adult learner. In brief, the model identifies three critical periods in the typical learning process during which time specific motivational strategies can have a maximum impact on learner motivation. The critical periods are (Wlodkowski, 1985):

> Beginning - this phase focuses on attitudes toward learning and the needs of the learner. We attempt to determine what people think they want or need from the instruction and we, as instructors, try to create a beginning that communicates to learners that they are independent, they have ideas that are valued, we are there to help (not control), and they are empowered to influence some of the events/activities of the course. The cooperative instruction approach I will examine in this paper responds directly to these matters.
>
> The During phase in which stimulation of the learner is the central feature is next. A powerful aspect of stimulation is that students normally want to participate and take an active role in their learning. They seek stimulation through involvement, discussion, and participation.

> The Ending phase contains elements of competence and reinforcement. We need to clearly define expectations and reduce ambiguity regarding what behavior is desired and is to be reinforced. Creating clear visions of what is expected leads to stronger links among performance-competence-satisfaction. And, a satisfied customer is likely to be a repeat customer.

In his work on control theory, Glasser (1986) proposes that people do only what they believe is most satisfying to them at the time. Control theory has to do with personal payoff-- what we do as individuals to control our environments to help us satisfy our needs. Among our needs are: belonging - to belong and love; power - to have mastery and control over situations and the environment; and, freedom - to have choices, room to grow, etc..

Glasser proposes that anytime we can introduce power, freedom, or belonging into any situation, we find the situation much more interesting. He holds that the rigid tradition that courses be restricted to individual effort and individual competition limits the chances of students to gain not only the power, but also the freedom and belonging they all desire.

Cooperative/Team Learning

Glasser (1986) proposes that small, organized, instructor-managed learning teams have much to offer because: students can gain a sense of belonging by working together in teams; belonging can provide the initial motivation for students to work, and, as they work and achieve success, they link the concepts that knowledge is power and then want to work harder; stronger students may find it need-fulfilling to help weaker students because they want the power and friendship that go with a high performing team; the weaker students find that it can be need fulfilling to contribute to the team effort because now whatever they can contribute helps; and, students need not depend only on the instructor--they come to depend a great deal on themselves and other members of the team -- this frees them from dependence on the instructor and supplies them with both power and freedom.

Along the same lines as Glasser, Mouton and Blake (1984) have concluded that some of the problems of and the relative ineffectiveness of current educational and training programs result from the character of the instructor-student relationship in the traditional classroom. They call this tradition the pedagogic model in which the instructor is the expert with control and authority over the students. The instructor determines the direction, rate, and character of the learning. Adult students being self-reliant and autonomous resent continued dominance and control by instructors.

Mouton and Blake refer to their instruction approach as Synergogy. The approach preserves the role of instructor as expert in providing authoritative subject matter; and, the proactive involvement of the learner in being responsible for learning. The basic principles of Synergogy that promote educational success for adults are: giving learners meaningful direction through learning designs and learning instruments; relying on teamwork rather than individual work to enhance involvement and participation; and, synergy, itself, which indicates that the whole is more than the sum of the parts (eg. shared experience, development of human relationships, etc.).

Perhaps the most specific and comprehensive expression of the team or cooperative learning approaches has been articulated by Slavin (1983). He defines these learning methods as techniques that use cooperative task structures in which students spend much of their class time working in 4-6 member groups; also, using cooperative incentive structures in which students earn recognition, rewards or , sometimes, grades based on the academic performance of their groups. Slavin found in examination of the three dozen formal experiments of these methods that cooperation has potential for improving performance, mutual attraction, and self-esteem in various settings. He found 36 field experiments of cooperative learning in which cooperative learning methods were compared to control groups for periods of at least two weeks. Of these studies, 32 measured student achievement. Twenty-one found significantly greater achievement in the cooperative methods groups than in the control groups, ten found no difference, and one found a slight advantage for the control group.

Slavin concluded that because cooperative learning is fun, social, and engaging, because it appears to be a humane form of classroom instruction, and because of its well-documented positive effects on a range of social outcomes such as human relations, interaction skills, etc., there are many people who advocate the use of the methods.

Johnson (1981) also reviewed the results of many of these same studies and concluded that the evidence indicated that cooperative learning designs promote more effective communication and exchange of information among students, greater facilitation of each others achievement, greater trust among students, greater emotional involvement in and commitment to learning by more students, and higher achievement motivation by more students, among other things.

The following sections of this paper will describe some of the features of cooperative instruction designs.

Advantages/Limitations of Cooperative Learning Methods

The benefits of these methods respond to many of the issues raised by both Slavin (1983) and Glasser (1986). These benefits or advantages are summarized here.

* Responsibility for learning is placed with the learners. Activities are learner-centered; the instructor behaves as a facilitator and is not the focal point of all activities.

* Learning groups are largely self-determining, autonomous units. This aspect not only reinforces independence but helps to create independence. It also establishes locus of control with the learning groups or teams.

* Elaborate equipment and/or facilities are not needed.

* Contributions of all learners are encouraged (this is implied, however, it may occur as a direct reinforcement by the instructor, and/or by sensitive, process-oriented team members).

* Secondary learning gains result. As team members develop their interaction skills they become more socially competent individuals, for example. In reviewing the work of the researchers who have extensive experience with cooperative learning designs, one is struck by their reporting of the percieved impact of increased frequency and quality of interaction.

Some of the disadvantages or limitations of cooperative learning methods are shown below.

* Diffusion of responsibility in groups/teams. This is an important feature. Some cooperative learning designs respond directly to the matter by bringing individual performances and assessments into evaluations. One may assume, of course, that the overachievers and slackers will balance one another in a group, although this assumption, in reality, serves no positive purpose.

* Some students seek extrinsic rewards in the short-term and want recognition from authority figures (instructor). These students may become dissatisfied with these approaches to instruction because the kind of reinforcement they desire is less likely to take place. Similarly, high achievers may become dissatisfied as well if reinforcements are infrequent or insufficient.

* There may be resistance to change in methods on the part of students and/or instructors.

* Learning designs and materials must be of the highest quality. Depending on the particular instruction plan design chosen, much preparation of instruments may be required on the part of the instructor. Materials for dissemination are quire limited, however, the fundamental instruction designs are documented and may be adapted to any discipline or content area.

* Some groups/teams simply do not function well in the process domain and this problem will interfere with learning (and, parenthetically, some instructors may not be competent to successfully deal with process domain problems).

In brief, we know enough about cooperative/team learning approaches to conclude that, on balance, the methods are at least as powerful as most other approaches as far as student achievement is concerned. Further, the secondary learning gains which typically result from engagement in these learning activities (eg. socialization, increased understanding of others, enhanced communication skills, increased liking of others, etc.) are usually highly desirable outcomes in and of themselves.

Examples of Cooperative Learning Designs

A. Jigsaw or Team Member Teaching

1. Assign students to teams (4-6 members) on some basis (random, gender, ability, etc.)
2. Assignments are made for pre-study with academic material divided into segments, one segment per each team member.
3. Teams assemble - members take turns teaching other members their material.
4. Give the class an examination on the material.
5. Supply the class with the test answers and the rationale for the answers.
6. Teams re-assemble and have a critique session (evaluate their methods, processes, performance, etc.)

Advantages:
*focused task specialization
*performance responsibility not diffuse
Disadvantages:
*no individual recognition for performance
*rewards/recognition for performance may be insufficient

B. Team Effectiveness or Student Teams-Achievement Division

1. Assign students to teams on some basis (see A-1.)
2. Give material in some form or combination of forms (lecture, readings, worksheets, etc.) to students to study.
3. Team members are to work helping each other (outlines, quizzes, etc.) until material is understood by all members.
4. Quizzes or examinations given to individuals
   (a) individual scores make up team scores
   (b) perfect individual scores are granted bonus points to help the team
   (c) team scores can be compared; recognition granted, etc.
5. Teams meet to evaluate their effectiveness (methods, etc.).

Advantages:
* individual performance recognized
* group performance recognized

Disadvantages:
* individual may contribute little to group effort
* no task specialization is guaranteed (limited focus)

C. Jigsaw II (Slavin, 1983)

1. Assign students to teams on some basis.
2. A body of material is supplied to all students; however, a portion of the material is assigned to individuals.
3. Members from different groups with same material assigned meet in "expert" groups to discuss their material.
4. Students return to their teams, teach other members.
5. All students complete an examination or quiz.-- individual scores can be combined to make team scores.
6. Team scores may be used in some competition where rewards or recognition are used.

Advantages:
* focused task specialization
* performance responsibility not diffuse
*individual/group performances can be assessed

Disadvantages:
* the design may be too competitive
* it comsumes much time to fully implement

To Conclude

Slavin (1983) has conducted perhaps the most thorough examination of the results of the studies of cooperative learning methods. With regard to achievement in learning, he examined the various studies on two criteria: task specialization, and group rewards based on member learning. In brief, the important conclusions were (in no particular order):

* methods which were high in individual accountability were much more likely to produce greater learning;

* the use of task specialization may be effective in increasing achievement -- this seemed particularly important in relation

to the learning of higher-order concepts (such learning tasks were frequently contained in the Jigsaw and Jigsaw II methods; and,

* methods that contain specific group rewards based on individual member learning (performance) were much more likely to be associated with greater achievement gain -- the group reward was a critical factor.

All of this suggests or recommends that for maximum achievement effectiveness the cooperative learning design should include elements such as:

1. task specialization for each individual in the team;

2. group study, collaboration, information processing, etc.;

3. assessment of individual member performance on a learning task;

4. establishment of a group or team "score" based upon individual members performance (learning); and,

5. use of specific group rewards based on members (individual) learning.

Finally, an example of a cooperative design is presented, below, that attempts to incorporate the elements identified above. material.

Example Design (similar to Jigsaw II)

1. The assignment to the class is to evaluate the short-term success and general financial condition of Company X, a case study.
2. Teams of four persons are formed and tasks are assigned as follows: one member is assigned to study revenues and expenses; another is assigned to study current and long-term assets; another is to study current and long-term liabilities; a fourth member is to study shareholder equity and the general business environment of the firm.
3. After having studied their respective portions, team members teach other members what they have learned. The team devises fact sheets, outlines, etc.. Consensus is reached among team members regarding the details of the response to the assignment.
4. The instructor gives an examination to all students.
5. Individual scores are combined to form a team score.
6. The team that is most successful is given special recognition.
7. Teams convene to critique their methods, processes, contributions, and the like.

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